

- REMARKS/ARGUMENTS -

Claims 1 to 14, 16 and 17 remain in the application.

Claims 1 to 5, 10, 12, 14 and 16 stand rejected under 35 U.S.C. (103)(a) as being unpatentable over Morris (U.S. Patent No. 4,647,210), in view of Haworth et al. (U.S. Patent No. 6,144,444 and Encjder (U.S. Patent No. 6,510,330).

Reconsideration is expected on the following grounds.

Morris describes the classical approach that has been extensively used for many process stream monitoring applications and which consists, as shown in the attached Fig. 1, in providing through holes in the process conduit and place "probes" with planar windows so that a precise optical path is established from an input fiber to an output fiber. It requires optical windows or lenses exposed to the process fluid, as well as means to seal the probes in place to prevent fluid from leaking out of the conduit. Morris is truly directed to the mounting and sealing assembly of the protective lenses 30 and 40, in order to protect the ends of the optical fibers from the process stream. As such, Morris clearly teaches avoiding passing the light through the curved wall of the conduit. The combination of precisely focusing light from the end of an input optical fiber cable into the end of an output optical fiber cable, while the light passes through the curved walls of an optically transmitting process conduit, and then through the process fluid in the confined conduit was clearly perceived by Morris as being not doable or Morris would not have gone through the process of designing a protective lens assembly for the optical fibers. If Morris had realized that this could be done through the (transparent) curved walls of a process conduit, he would have used this because it is a more secure way to measure the properties of the process stream. Passing light through a curved light transmitting wall was known to be associated with aberration problems. As such, it would not be obvious to a person skilled in the art to locate the optical fiber lens coupling point outside of the conduit section. The inside or outside location of the optical fiber lens coupling point completely changes the optical path and, as such, positioning the optical fiber lens coupling point inside or outside of the conduit involves a lot more than only a routine skill for a person skilled in the art.

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The Examiners rely on column 1, line 58 to column 2, line 2 of the Morris patent to support the argument that it is obvious to place the light delivery end and light receiving end of the fiber optic cables inside or outside of the conduit. It is respectfully submitted that column 1, lines 58 to column 2, line 2 only highlight the fact that the use of optical fibers 22 and 42 permits remote positioning of the light source 40 and of the analyzing equipment 44, 46 and 50. This passage of the Morris text has nothing to do with the light delivery and receiving points of the system. There is simply no suggestion whatsoever in Morris to include the wall of the conduit section in the optical path.

It is not obvious from either Haworth or Enejder that light can be focused through an optically irregular (i.e. curved wall) process conduit wall to the outer side of the process stream and focused precisely into the small end of the receiving optical fiber. Haworth and Enejder did not require focusing of the output of the first optical fiber because they are both dealing with a highly scattering liquid (blood) and use the scattering property to advantage. In view of the foregoing, independent claims 1 and 12, as well as the claims depending thereon, are clearly allowable over the cited references.

The application is believed to be in condition for allowance, and an early action to this effect would be much appreciated.

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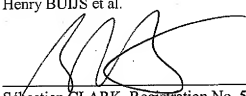
Should there be any outstanding issues concerning the present application or if the Examiner is still not convinced of the patentability of some of the claims, Applicant respectfully requests a telephone interview with the Examiner to advance prosecution of the present application.

Respectfully submitted,

Henry BUIJS et al.

By:

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Date



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Enclosure - Appendix with sketch of Fig. 1

APPENDIX